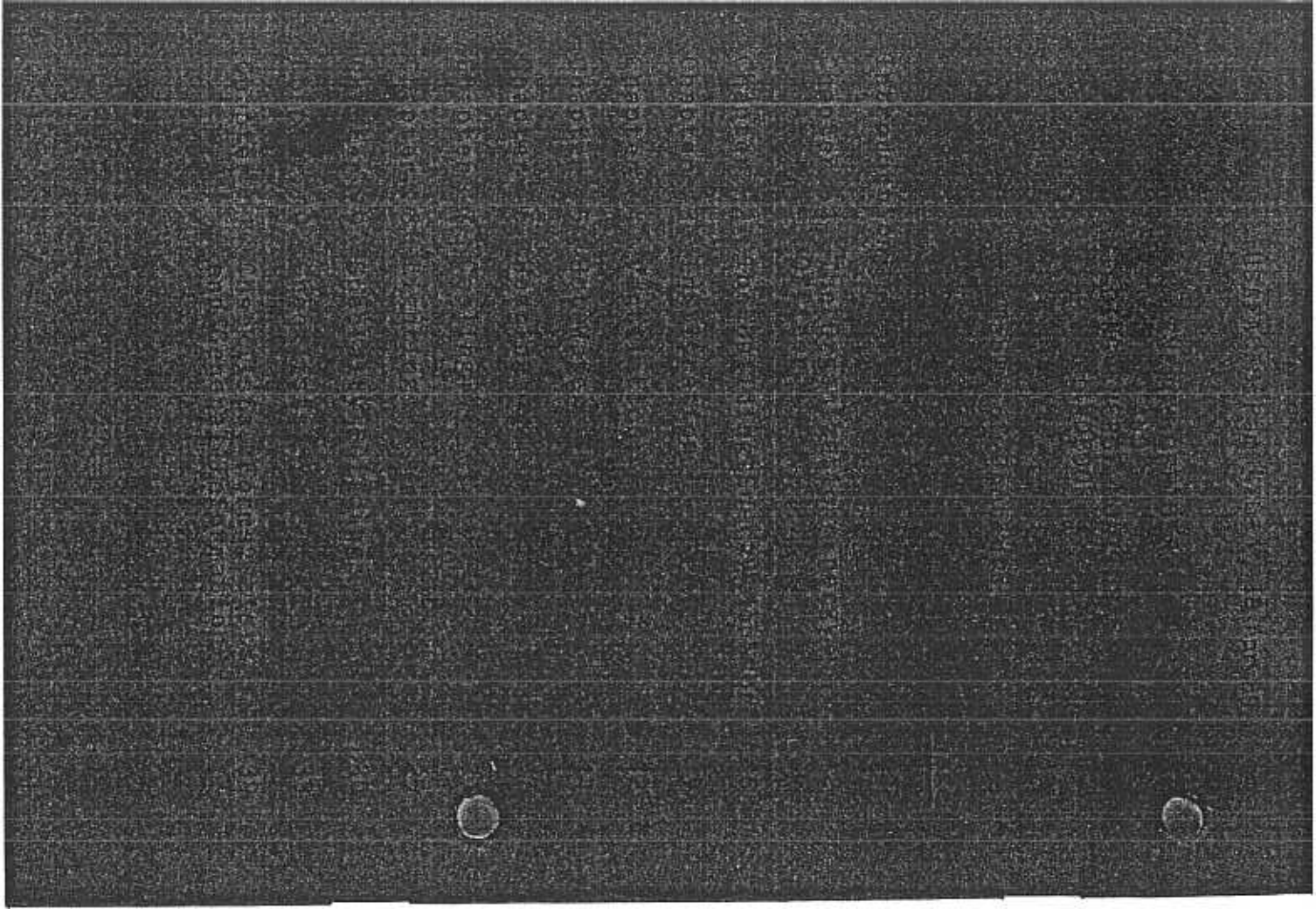
USAEC Pam 420

ENERGY OFFICER AND BUILDING ENERGY MONITOR'S HANDBOOK

DEPARTMENT OF THE ARMY
ENERGY MANAGEMENT
Fort Sill, Oklahoma

18 April 1989



INTRODUCTION

The economic and strategic need for a strong Army Energy Program cannot be over-emphasized. Over the last several years, the Department of the Army and the Department of Defense have come up with a large number of energy conservation programs aimed at improving the energy efficiency of buildings. However, energy conservation retrofits are only part of the answer. Energy efficiency through education, awareness, and involvement is the key to a successful energy reduction program. The energy reduction goals, set by the Department of the Army, are achievable provided support can be obtained at all levels, from the Building Energy Monitor (BEM) to the Commander.

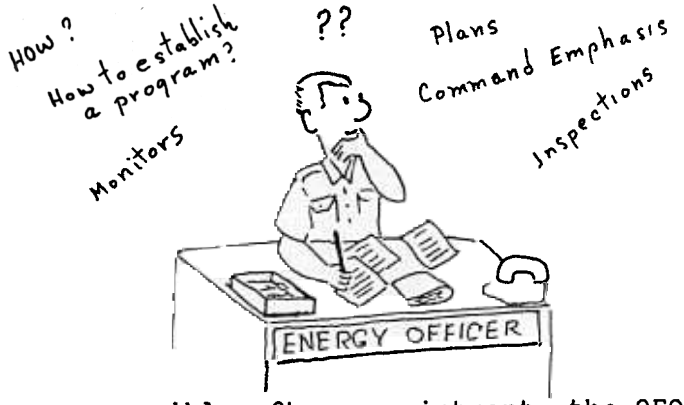
This handbook explains the various energy consuming components of buildings, how they interact with each other, and various ways that energy can be saved during the course of the operation of facilities.

PUBLICATIONS:
USAFACFS Reg 420-1

CHAPTER 1

THE ORGANIZATION ENERGY OFFICER

You as the Organization Energy Officer (OEO) serve a vital role - Energy Manager for your organization. You represent your commander or activity director in all matters concerning energy usage.



As soon as possible after appointment, the OEO should attend the Basic Energy Awareness Briefing provided by the Energy Office. Appointments are made by calling 351-3225 or 351-6963. Arrangements can also be made for briefings to all organization energy personnel at the same time.

RESPONSIBILITIES

The OEO's primary responsibility is to maximize energy efficiency of each building by coordination with the Energy Office, Directorate of Engineering and Housing to ensure that his or her efforts are in agreement with the various programs initiated by the Energy Office and the standing operating procedures of the installation. A team effort will yield far more benefits than individual action.

Since the OEO is charged with unit or activity energy conservation he or she should assume the following responsibilities:

- Know and enforce the contents of USAFACFS Reg 420-1.
- Act as point of contact for unit energy related matters.
- Appoint, in writing, Building Energy Monitors.
- Prepare work orders for low cost energy conservation opportunities.
- Call-in service orders for maintenance items that affect energy conservation.
- Review energy related work orders prior to their submittal to DEH.
- Discuss your energy program with the organization commander or director and ask for full command support.
- Recommend to the energy office, energy saving changes when these changes may benefit the organization or the installation as a whole.
- Coordinate with the Energy Office prior to requesting air conditioning units or moving window air conditioners to another building. Include FS Form 855 with your work order.
- Suggest the organization commander or director turn off heat or air conditioning in buildings that are to be unoccupied for any length of time. Only commanders should request DEH to shut down central systems.
- Be prepared to implement, by building, the Energy Contingency Plan in USAFACFS Reg 420-1 when called to do so by the installation commander.
- If your organization is authorized self-help, ensure that sufficient personnel attend self-help classes provided by DEH. Well trained self-help teams can keep energy waste down by good building maintenance.

- Fort Sill is tasked with maintaining its energy usage within a certain goal. The OEO should notify the Fort Sill Energy Office when conditions exist which may change the installations energy use. When this happens, goal adjustments are made to compensate for the increase in energy use.

- Some goal adjustment examples:

  - after hours building usage

  - installation of new high energy use equipment

The OEO should fill out monthly checklists as specified in USAFACFS Reg 420-1. These checklists should remain on file for one year. The Building Energy Monitor should send the Organization Energy Officer reports of deficiencies he/she can't correct. You, as the OEO will need to take necessary steps to correct deficiencies.

ENERGY CONSERVATION OPPORTUNITIES

If an energy conservation opportunity is discovered, you can discuss your findings and recommendations with the Energy Office (351-3225/6963). If the opportunity is technically sound, you might be requested to prepare and submit a work order. If the idea requires a large capital investment or is applicable to a broad range of buildings, the Energy Office will prepare project documentation to

Gain funding through one of the various energy conservation funding programs. The checklists and concepts in this handbook will help you get some ideas for these recommendations.

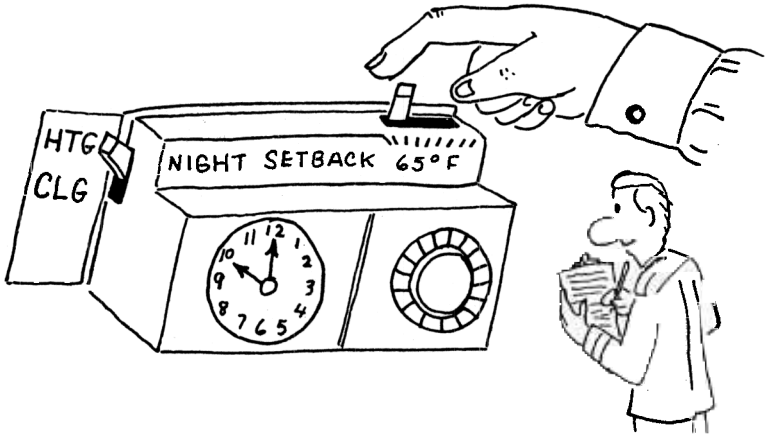
HOW TO CARRY OUT YOUR RESPONSIBILITIES

In order to carry out these tasks, you will need to know something about the energy consuming components of a building and how efficiency can be optimized. This handbook will help you understand energy conservation, the types of things that you should be looking for as you carry out your job. The basic energy awareness briefing mentioned earlier in this chapter will also help you in this area. Remember, as the OEO, you are an important part of the Fort Sill Energy Conservation Team, an energy manager, assisting the Energy Office in carrying out the installation commander's energy program as directed by DA and TRADOC. Always keep your organization commander informed of your energy progress. He can be a big help in keeping the program on track and running smoothly.

CHAPTER 2

THE BUILDING ENERGY MONITOR

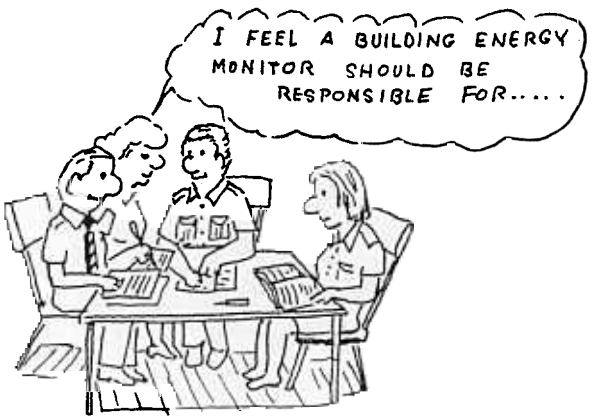
As the Building Energy Monitor (BEM), you are a "star player" on the organization energy team. You are on the firing line. You are in those facilities that need to be monitored and assessed on a regular basis. If you are in a building which has been modified to be more energy efficient, it is extremely important to ensure that the gains in energy efficiency are not defeated by the actions of occupants and that the building operates at its optimum.



If you are in a building which has not yet been modified, it is important to ensure that the building operates as efficiently as possible.

RESPONSIBILITIES

The BEM's primary responsibility is to ensure that each building he or she is responsible for is operating at maximum efficiency. This handbook will help you to understand energy conservation and the types of things that you should look for as a Building Energy Monitor.

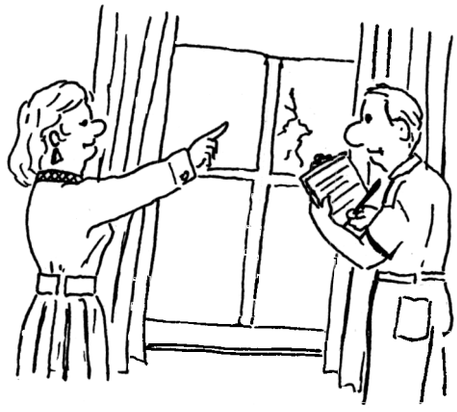


When initially appointed by the OEO, the BEM should discuss his or her duties with the appointing officer either on an individual basis or on a group basis with other Building Energy Monitors. As soon as possible after appointment, the OEO will make arrangements for you to attend the basic energy awareness briefing conducted by the Energy Office. This briefing is designed to teach new personnel how to manage and monitor a successful energy conservation program.

Energy monitors are encouraged to communicate with their OEO to exchange energy related information, ideas, and solutions to difficult energy conservation problems. The Energy Office can provide additional assistance by calling 351-3225 or 351-6963.

The BEM is charged with monitoring buildings for energy conservation and should assume the following responsibilities:

- Know the contents of the Fort Sill Energy Conservation Regulation USAFACFS Reg 420-1.
- Keep the OEO informed of your building's energy conservation program.
- Encourage building occupants to notify you when energy conservation problems exist that are unknown to you.



Complete building inspection checklists in accordance with USAFACFS Reg 420-1.

Prepare work requests to correct deficiencies which cannot be corrected by unit personnel and send them through your Energy Officer for review.

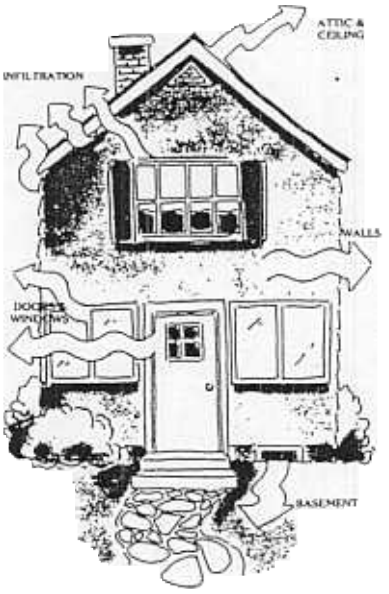
Recommend energy saving changes to buildings if these changes will save energy.

CHAPTER 3

INFILTRATION

Heat is mainly lost during the heating season or gained during the cooling season by conduction and infiltration. Heat lost or gained by conduction passes directly through the building materials which make up your walls, windows, ceilings, roofs, and floors.

Infiltration is heat lost or gained due to outside air entering a building through cracks around windows, doors, and through the outside shell of the structure. Not only does it cause discomfort to building occupants, it is a major contributor to unneccessary heating and cooling costs and energy losses.

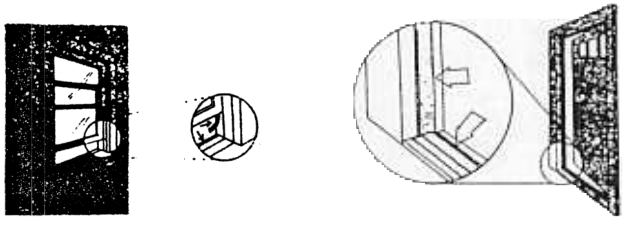


During the heating season, infiltration contributes to heat loss because cold infiltration air displaces warm air and must be heated to maintain desired comfort conditions.

During the cooling season, infiltration contributes to heat gain because the warmer infiltrated air must be cooled to maintain desired comfort conditions.

The following suggestions will help reduce the rate of infiltration into your building and the associated energy use:

- Make sure all doors are closed, especially during the heating and cooling seasons. Post a sign to remind occupants to close doors.
- Make sure all windows remain closed during the heating and cooling season. You might consider placing small signs around the windows instructing personnel not to open them during the seasons.
- If your building has any unheated or uncooled spaces, see that doors to these areas are closed.
- If your building has a loading dock, make sure its door is closed when not in use.
- If your building does not have dock curtains for unloading, initiate a work order for their installation.
- As you tour your building, you should periodically inspect the weather stripping and caulking. If it is old, dried or peeling, or there is none, be sure your self-help people are informed. If you do not have self-help capabilities, contact your energy officer and initiate a work order for his review. The work order will then be sent to DEH for action.




If the building is drafty check to see if there is insulation in the attic (if there is one), walls, and under the floors if it is above grade. Report your findings to the OEO and suggest the installation of caulking, weather stripping, or storm doors and windows.

- If you see any cracked or missing windows, be sure to submit a work order for immediate repair if you do not have a self-help program If you do, ensure that self-help personnel repair the windows.

- If your building has a significant amount of traffic, tell the OEO that a vestibule or revolving door might be installed to reduce infiltration.

- You may notice cracks in the outside of the building, such as the joint where the foundation meets the siding or wherever exterior walls are penetrated by pipes, ducts and conduits. Be sure that the Energy Office is made aware of it so that caulking can be installed.

- If your building has many entrances suggest closing some off - if the fire laws permit.


If your building has window air conditioners, make sure that they are covered and vents are closed during the heating seasons.

- See USAFACFS Reg 420-1, appendix G for more information on window air conditioners.

CHAPTER 4

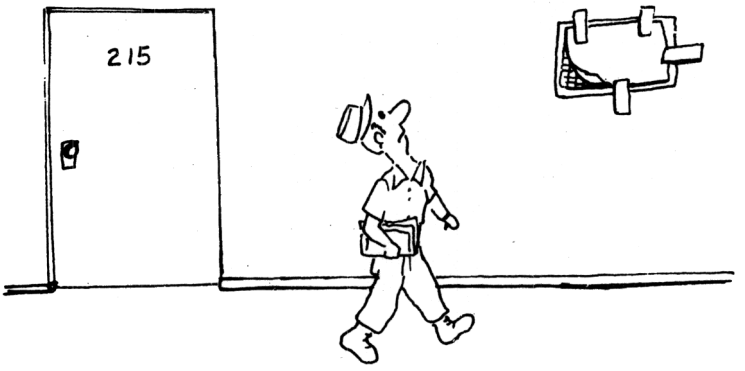
VENTILATION

Ventilation has a significant impact on a building's total energy consumption. Each unit of air brought into your facility must be heated or cooled and, in some cases, humidified or dehumidified. If excess air, beyond that required for the comfort and safety of your building's occupants, is brought in, a considerable waste of energy is inevitable.

Energy savings arise from reducing ventilation rates and/or shutting off the ventilation system when it is not needed. However, you must take some care in looking at these energy conservation opportunities. Because of existing building codes, if you think that possibilities for savings can be realized you must check with the OEO, so he or she can contact the Energy Office to assure that complete analyses are done and legal requirements met.

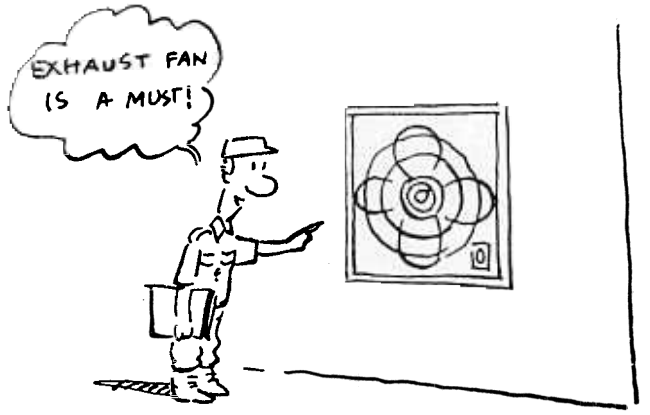
The following ideas will assist you in seeking savings due to excess ventilation:

- Suggest to the OEO that ventilation units operate only as needed. Consider shutting them off to any area that will remain unoccupied for more than one day.



As you walk through your building, periodically inspect for blocked air vents, dirty grills, or defective insulation on ducts.

If you have some rooms in your building that have special ventilation requirements, recommend that time clocks be installed on these systems. This will assure that they are turned off when not in use and yield considerable energy savings.

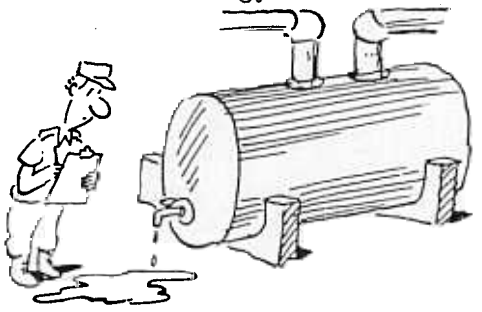


Ask the Energy Office to investigate the possibility of installing time clocks wired to the light switch in areas such as latrines so that the fans there do not run all the time.

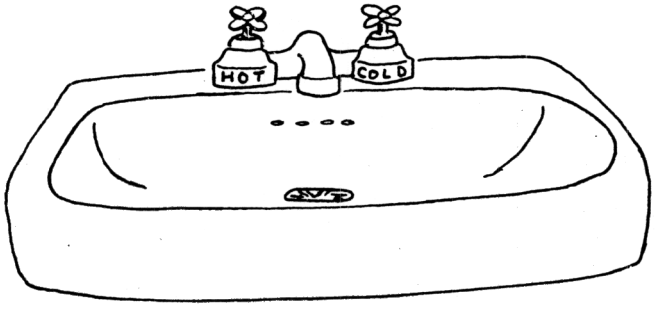
CHAPTER 5

HOT WATER

Hot water generation and its consumption often accounts for up to 10% of a building's energy use. If your building has a restaurant, cafeteria, or laundry, there are many opportunities for saving energy. However, most will require the installation of new equipment. This work should be done together with your OEC and the Energy Office.

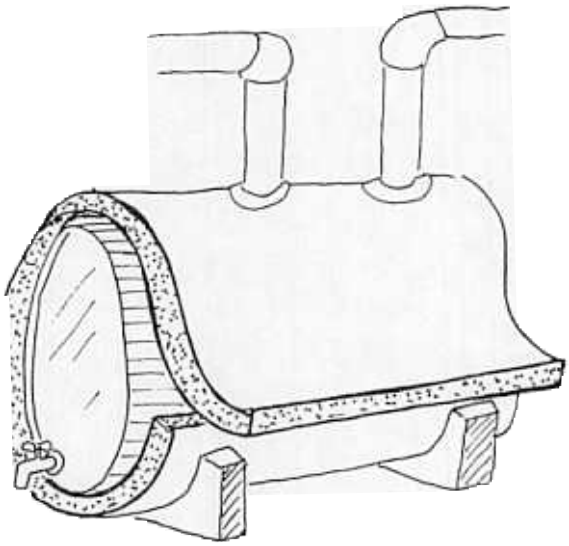


As you probably know, the usual temperature at which hot water is supplied is generally too hot to be used directly. Cold water must be mixed with it at the tap. Here then are some possible energy savings:



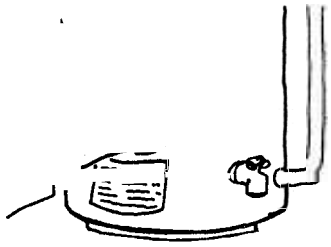
- Check with the Energy Office to see if you can get the hot water temperature reduced to about 100 degrees Fahrenheit. If necessary submit a work order to install boosters where the temperature must be higher--for dishes, laundries, etc.

- Suggest that self-closing faucets be installed on hot water taps.

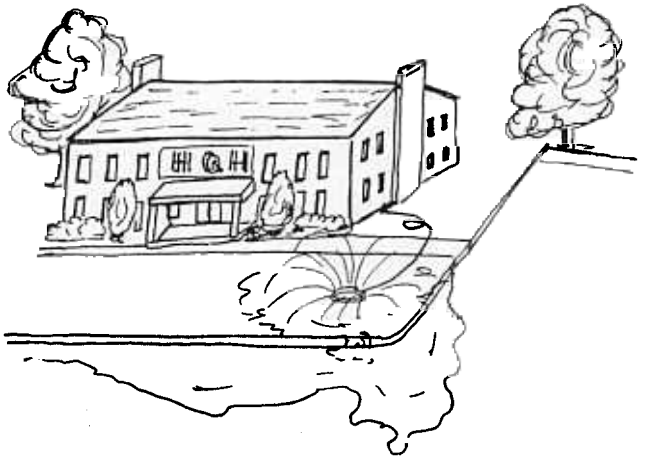


Finally in hot water systems, you will want to improve the efficiency of the overall system. This is best accomplished by:

- Reducing hot water heater temperature. Water heaters consume a high percentage of fuel because the water is constantly heated, cooled and re-heated again, but always ready for use.



- Inspecting and then having insulation repaired on hot water piping and tanks.
- Installing insulation on the hot water system, if it does not exist already.
- Repairing all leaks, including those at the faucet.
- Reporting leaks and drippy faucets immediately.
- Eliminate wasteful practices when watering lawns.



CHAPTER 6

HEATING

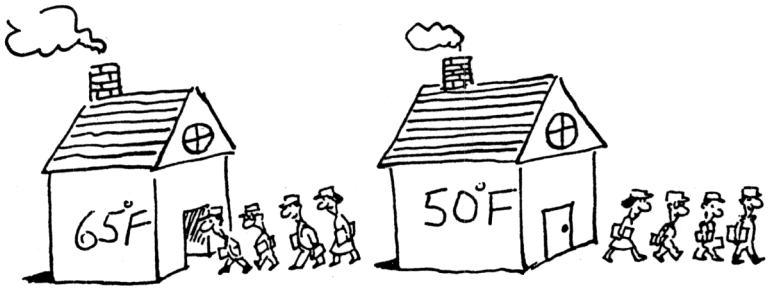
It is in the heating and cooling systems that most of your building's energy savings can arise. Much of these savings are often developed at the central plant on your installation.

There are many operational items that you should keep in mind: your building is a unique combination of carefully balanced sets of systems--heating, cooling, and ventilating. Therefore, the suggestions that follow should be considered as guidelines only and any major changes must be cleared with the Energy Office.

Energy used to heat your building to comfort level conditions when it is unoccupied is wasted. Save energy by setting back the temperature during these times. Use the following table as a guideline for recommending these setbacks:

TYPE OF ROOM	OCCUPIED	UNOCCUPIED
Office space		55 F
Corridors	62 F	50 F
Dead Storage	40 F	40 F
Cafeterias	65 F	55 F
Mechanical Rooms	55 F	50 F
Occupied Storage areas	55 F	50 F
Auditoriums	65 F	50 F
Computer rooms	65 F	55 F
Lobbies	65 F	50 F
Rest Rooms	65 F	55 F
Garages	no heat	no heat

With these figures as guides, consider the following:



- Suggest that radiators or heating registers be shut off completely in vestibules, corridors, stairwells, and lobbies.
- If your building does not have thermostats that are capable of night setback, tell the Energy Office so that plans can be made to have them installed.
- If your building is used after-hours, recommend that the number of spaces occupied be very limited to assure that you do not heat the entire building unnecessarily. Inform the Energy Office when buildings or spaces are used after hours so energy consumption adjustments can be made.
- Make sure that the thermostats in your building are tamper-proof. Recommend installing locking covers.
- During particularly cold weather, encourage your building's occupants to wear heavy clothing.

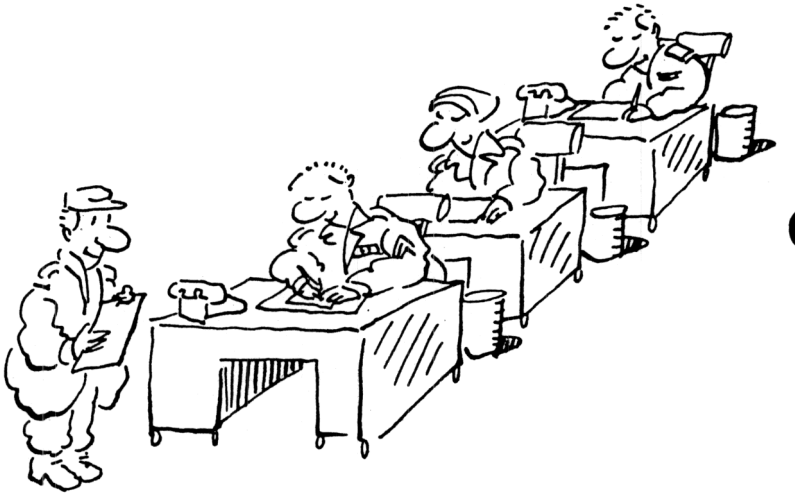
The outside conditions can often cause considerable energy loss due to heat escaping through windows and exterior walls. A few simple ideas are possible:

- If the winter sun is shining on a window, take advantage of it and use it to partially heat the room.
- On the other hand, when the winter sun does not shine on windows, recommend that the occupants draw the drapes, shades or blinds.
- Periodically check to see that windows are tightly closed in winter.
- Refer to the section on infiltration to look into weatherstripping and caulking.
- If your building's occupants complain about cold areas, suggest that they rearrange their rooms to place desks away from exterior walls and windows.
- Keep the windows clean to permit maximum sunlight transmission during the winter.

- As you look at the outside of your building, check to see that the foliage is trimmed; especially around the southern, eastern, and western walls.

Other means to improve the energy efficiency of your building often arise from opportunities at the central boiler or power plant. However, there are some things that you can do to help here:

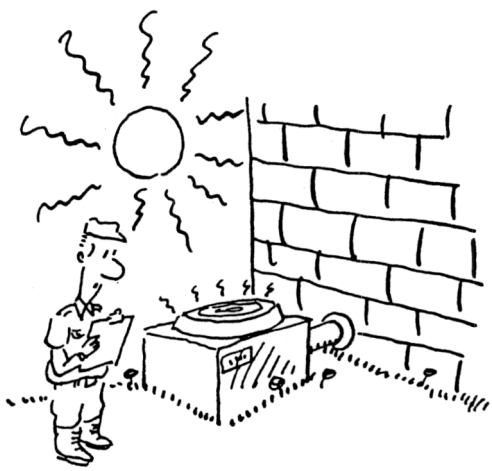
- If you notice any steam or hot water leaking from the heating system, immediately inform the Energy Office. This can mean substantial loss of energy.
- The heating system needs insulation. If you see any missing or in poor repair, submit a work order.



CHAPTER 7

COOLING

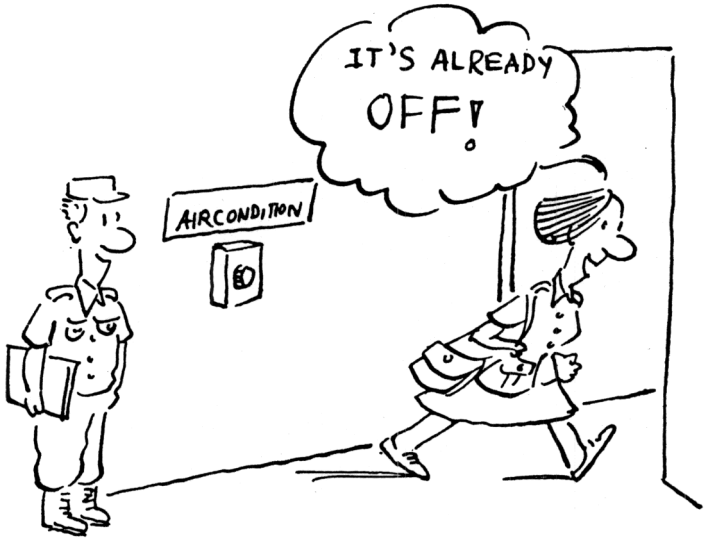
Improvements to the cooling system and its operation can save significant amounts of energy. As may be imagined, many of the items that work well for conserving energy in the heating system can also work well for the cooling system. Important here, as in heating, is to monitor air ducts leading into rooms from the central system. Occupants have a tendency to cover these if it gets too cold (or too hot during the heating season), instead of notifying someone who can correct the problem. Closing these air vents can cause problems throughout the building or at least on that particular floor.



The object here will be to limit the operational hours of the cooling while yet providing the comfort that your building's occupants need. To do this most effectively, you need to know something about recommended cooling temperatures. These guidelines are:

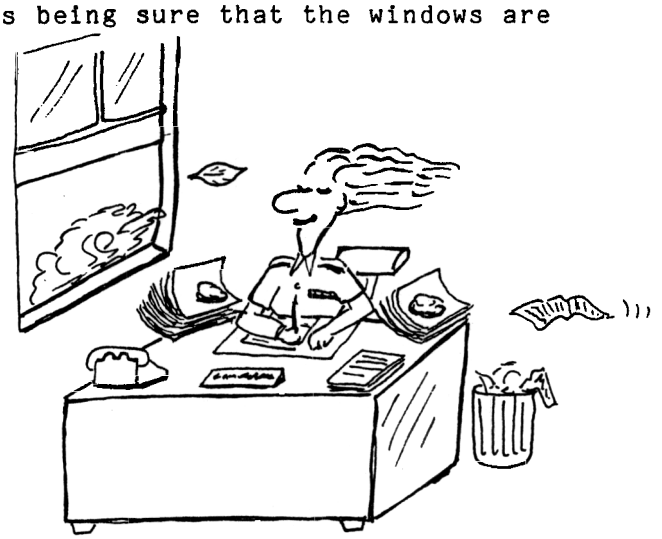
OCCUPIED PERIODS

Type of Area	Minimum Temperature	Minimum Humidity
Offices	78 F	55%
Corridors	uncontrolled	uncontrolled
Cafeterias	75	55
Auditoriums	78	50
Computer rooms	75	as needed
Lobbies	82	60
Rest Rooms	80	uncontrolled
Storage, equipment rooms, garages	uncontrolled	uncontrolled



mperatures and humidities can provide reasonable guidelines for periodic inspections of your building. Other ideas for energy conservation are:

- As you check the air conditioning thermostats, be sure that the above guidelines are not exceeded.
- Make sure the entire air conditioning system is turned off at night and during days when the building is unoccupied.
- If possible try to use outdoor air for cooling. This means being sure that the windows are operable.



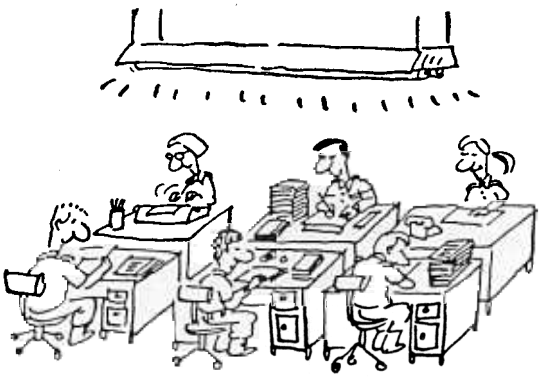
- Once air conditioning has been turned on, make sure windows and storm windows are closed.

- During the cooling season, windows can work against you. In hot weather, adjust the blinds, drapes, or shades to prevent penetration of solar heat into the building.
- Be particularly careful with a skylight, if your building has one. Treat it as you would a window.
- Ask occupants of your building to turn off air conditioning systems if they plan to be out of their office for a considerable period of time.
- As in the heating system check for leaks and faulty maintenance.

CHAPTER 8

LIGHTING

In most of the buildings on an Army facility, electric lighting is one of the major users of electrical energy. This is due to the fact that many existing buildings were designed without knowledge about final space use and without the benefit of recent developments and research in the field. There exists, therefore, a significant potential for lighting system modifications and, thereby, energy savings.

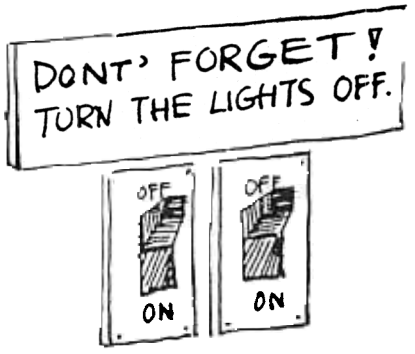


Before making any suggestions, you must recognize that a lighting system is just that-- a system. Its many elements are interrelated. While energy can be conserved by properly implementing the suggestions offered below, you should realize that these actions should be taken only after you look into the effects on the entire system. It is especially important for you to recognize that major alterations to the lighting system can have impacts on the building heating and cooling system.

There are many possible ways to save on lighting energy. Consider some of the following ideas.

First, and contrary to common belief, it is always better to turn off a light when it is not needed--even for a short period of time. In view of this "switch it off" policy, you should consider the following:

- Mark all switches so that occupants will remember to turn off the lights.



- Suggest to all building personnel that lights should be out if not needed in storage rooms, meeting rooms, bulletin boards, unassigned areas.

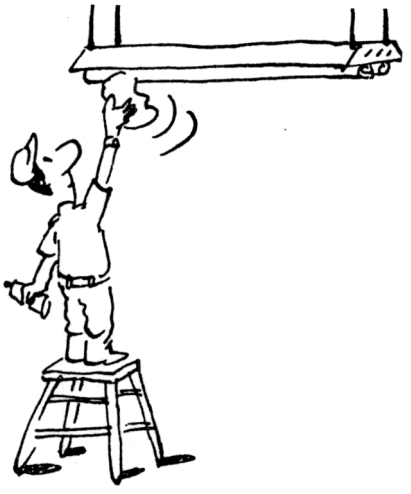
- Make sure that building lights are turned off when the facility is unoccupied except those, of course, needed for security.

Another major area for possible lighting savings comes from improving the effectiveness of existing lighting. Most of these savings, as you will see, arise from proper building maintenance.

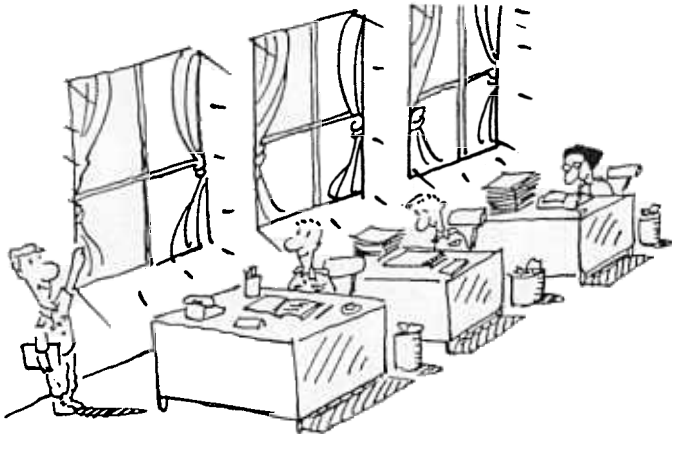
- Suggest that cleaning services regularly clean the lighting fixtures, especially flourescent lights.

- Check the walls of your building to see that they are clean; if not suggest that they be washed.

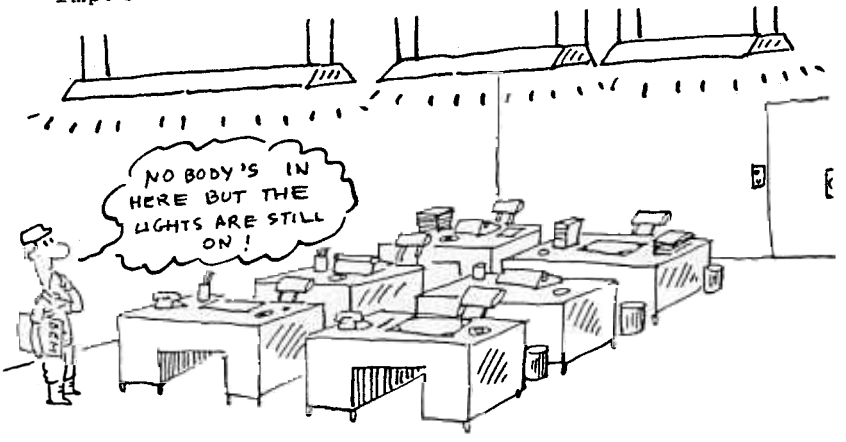
- If your building is undergoing renovation, suggest to the Energy Office that the walls and floors be decorated with light colors to improve the reflected light.
- If your building has many high partitions, you might look in to the potential for lowering them and "sharing" the light among the occupants.



If possible in your building, suggest to the occupants that they make maximum use of daylight for their lighting. Appropriate use of this source will save electrical energy, decrease the heating requirements, and generally decrease cooling load.



- To use the daylight, be sure windows and skylights, if any, are clean and cleared.
- Suggest to building occupants that they move their desks closer to windows to take advantage of outside light.
- Check blinds, drapes, and shades-- open them to improve the use of daylight.



Other lighting suggestions will require the assistance of the Energy Office. If some of these that follow look like good possibilities for your building, ask them to provide you with a lighting survey.

- In corridors, many fixtures can be eliminated without a significant reduction in lighting levels.
- In many areas of a building, storage, or corridors for example - the existing lights can be replaced with those having smaller wattage.
- There are many high efficiency lamps available for use. Suggest that these replace the ones that burn out.

- Suggest to building occupants that they use "task" lighting rather than overall room illumination.

CHAPTER NOTES

CHAPTER 9

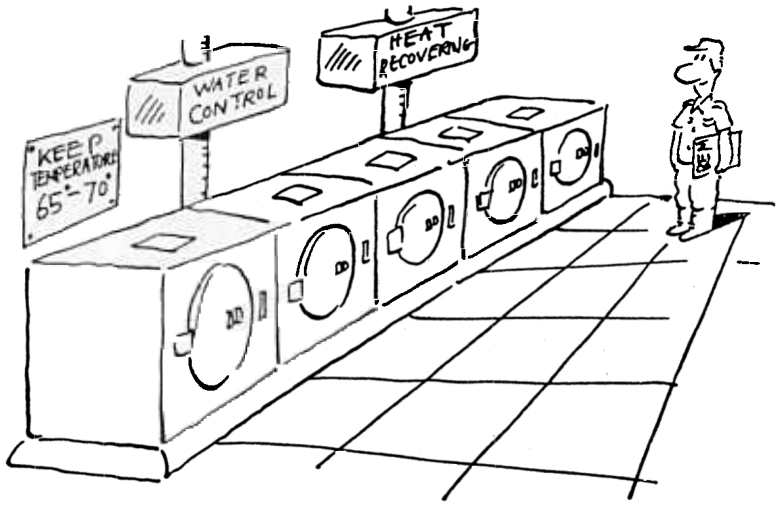
SPECIALTY BUILDINGS

There are many special buildings in the Army inventory which have unique needs and requirements These include laundries, computer facilities, kitchens, etc. The energy conservation techniques suggested in the preceding sections will work in these buildings. We discuss some of them in this section.

Laundry Rooms

The laundry room is obviously a major consumer of hot water for washing and hot air for drying. There are many opportunities for energy conservation.

- Combine operations to reduce the number of washers.
- Suggest that the occupants use cold water detergents and keep the temperature down to 65 - 70.
- Be sure that water filters are cleared regularly. Keep the basket and the working parts of the washer clean for maximum efficiency.
- Suggest that clothes be sorted according to type and soilage, and run washers on the minimum cycle necessary for clothing and degree of soilage. Set timers appropriately.
- Suggest that lint screen and exhaust blowers be cleared at least twice each day.
- Consider ironing instead of drying whenever possible, because it is more energy and labor-efficient. Use the extractor cycle and, if needed, partial drying before ironing.



- Minimize warmup time, and run irons only when actually in use.

Computer Facilities

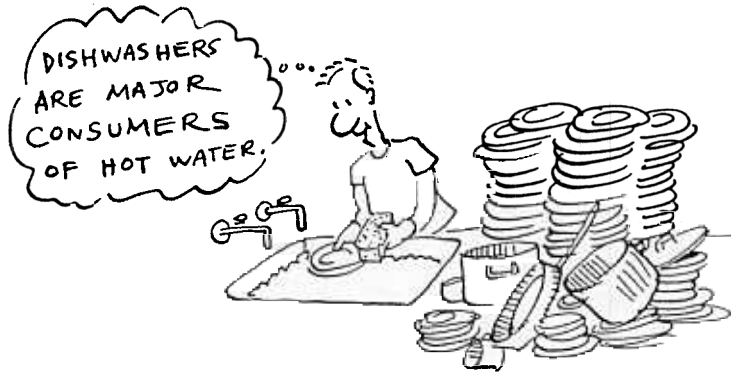
Computers often need very particular environmental conditions for their efficient operation. However, these are often not followed completely. Doing so can save energy for the installation.

- Look into manufacturer recommendations for temperature levels and humidity requirements. Be sure that they are followed.
- If, as is often the case, humidification is used to eliminate shock hazard, shut off the humidifier when shocks are no longer a problem.
- Suggest that lighting levels be reduced to those recommended by the manufacturer.
- As in the laundry, heat recovery may be possible.

Kitchens and Other Similar Facilities

These types of facilities, located throughout the installation, are major consumers of energy. Whether they are in the PX or the Officers' Club, savings can often be developed. Again, analyses will often be required; check with the OEO.

- Suggest the reduction or possible elimination of humidification.
- Exhaust fans serving kitchens are often interlocked with outside air fans or dampers. Be sure the staff shuts down the entire system when not needed.
- Recommend concentrating smoking areas together to reduce ventilation needs.
- Dishwashers are major consumers of hot water. Often the hot water delivery temperature is set for this equipment. Recommend that the overall temperature be dropped and then use a booster if necessary for dishwashing.



- In kitchens, suggest that the serving and cooking staff avoid keeping infrared food warming lamps on when no food is being kept warm.

CHAPTER 10

CHECKLISTS

In following pages, we provide a sample checklist for the various areas discussed in the preceeding sections. This sample checklist is not used by the installation, however, it is an excellent source that can be used when developing an organization inspection program.

The Building Energy Monitor should go through the building on a regular basis and review these checklist items making appropriate notations. These notations should be reviewed with the Organization Energy Officer to ensure that these items are addressed.

Fort Sill provides checklists for the Organization Energy Officer and the monitor. Energy Officer checklists are obtained through normal supply channels or at the Energy Office.

BUILDING ENERGY MONITOR CHECKLIST

Monitor's Name:

Section and Phone:

Date/Time:

Checklist Item	Location/Remarks
Heating and Cooling	
a. Unused areas and rooms not closed off.	
b. Air conditioners left running.	
c. Air condi ioning or heat ng ve ts obstruc ed.	
d. Exterior doors left open.	
e. Windows left open.	
f. Room temperature too high during occupied periods (winter).	
g. Room temperature too high during unoccupied periods (winter).	
h. Room temperature too low during occupied periods (summer).	
i. Room temperature too low during unoccupied periods (summer).	
j. Thermostats damaged.	

Checklist Item	Location/Remarks
k. Fireplace damper open when not in use	
l. Radiators are dirty.	
m. Air filters need replacing.	
Lighting	
a. Lights left on in unoccupied area	
b. Lights in use when daylight is sufficient.	
c. Exterior lights on in daytime.	
d. Light levels too high in corridor, stairwells, etc.	
e. Dirt on the surfaces of lamps and/or light reflecting or diffusing surfaces of fixtures.	
f. Lighting in work area exceeds requirements for task (refer to guidelines).	
g. Light bulbs with excessive wattage in use.	
h. Fluorescent lights have been improperly delamped (e.g., ballast is still connected).	

Checklist Item	Location/Remarks
i. Lights over stacks of supplies or equipment.	
j. Frosted incandescent bulbs in use rather than standard clear bulbs.	
k. Excessive exterior illumination.	
l. Walls and/or windows are dirty.	
Other Electrical	
a. Equipment left running when not in use.	
b. Personal heaters/coffee pots in use.	
c. Elevator fan in use	
d. Inordinate number of elevators in use during weekends, evening, holidays.	
e. Motor-generated set located in the elevator machine room in use during nights, weekends, holidays.	
f. Transformer in use when not required for appliance use.	
g. Light bulbs removed from vending machines.	

Checklist Item	Location/Remarks
Water	
a. Leaking faucets.	
b. Water flow (gallons/minute) exceeds guidelines.	
c. Hosing is being used to clean sidewalks or pavement.	
d. Hot water pipe insulation is missing or damaged.	
e. Hot water outlet temperature in excess of 110 degrees Fahrenheit.	
f. Hot water delivery in prohibited area (e.g., toilets, administrative areas).	
g. Steam/water leak pipes.	
h. Domestic hot water being circulated during unoccupied hours.	
i. Hot water tank is not insulated or insulation is damaged.	
j. Partial load in dish or clothes washers.	

Checklist Item	Location/Remarks
Refrigeration	
a. Refrigeration unit in drinking fountain is in use past the end of normal building hours.	
b. Gaskets around refrigerator doors are not tight.	
c. Refrigerator needs defrosting.	
Building	
a. Broken windows/doors.	
b. Defective fireplace damper.	
c. Misaligned exterior door.	
d. Cracked caulking around windows, doors, and exterior joints.	
e. Defective or missing weather stripping around windows and doors.	
f. Shades/curtains are missing on windows.	
g. Outside air intake damper does not close tightly.	
h. Exhaust air outlet(s) with no damper(s).	

CHAPTER 11

CHECKLISTS, FORMS, LISTS, AND GENERAL INFORMATION

FS Form 235	Energy Conservation Inspection Report. Used by the Energy Officer for organization inspections. Completed checklists will remain on file for one year. This form is also used by installation inspectors when reviewing a command's energy program. The form is available thru normal supply channels.
FS Form 917	Bi-weekly Energy Checklist. Used by Building Energy Monitors. This form is for a fast "walk through" and contains only basic requirements. This form will remain on file for 90 days.
FS Form 855	Request for Air Conditioning. This form must accompany any request for air conditioning including the DA Form 4283 Facilities Engineering Work Request. This form can be acquired only at the Energy Office.
FS Label 3	Thermostat Setting Card. Placed at occupant controlled heating and air conditioning thermostats. Obtained through supply channels. A 3x5 card can be used in lieu of the printed card.

List of Buildings Requiring Controlled Air Conditioning	USAFACFS Reg 420-1, appendix I
List of Buildings Requiring Controlled Heating	USAFACFS Reg 420-1, appendix H
Heating and Air Conditioning Policy	USAFACFS Reg 420-1, appendix G
Complete Table of Lighting Levels	USAFACFS Reg 420-1, appendix F
Energy Efficiency Ratio (EER) for window air conditioners	EER must not be less than 8.5 for 120 volt unit and 8.0 for 230 volt unit. See USAFACFS Reg 420-1, appendix G, for computing EER.
Command Energy Council Membership List	USAFACFS Reg 420-1, appendix A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